Amendments to the Claims:

Please amend Claims 76 and 79 and add new Claims 92-97 as set forth below.

1-75. (Canceled)

76. (Currently amended) A method of detecting the ~~presence or~~ absence of a mutation in the sequence of polycystic kidney disease type 2 (*PKD2*) gene in a human subject, comprising the steps of:

(a) obtaining a polynucleotide sample containing the sequence of *PKD2* gene from a human subject;

(b) comparing the polynucleotide sample to a reference human wild-type *PKD2* sequence (SEQ ID NO:6); and

(c) determining the differences, if any, between the sequence of *PKD2* gene in the polynucleotide sample and the reference wild-type *PKD2* sequence (SEQ ID NO:6), wherein ~~the differences are mutations of *PKD2* gene which comprise one or more deletion, insertion, point, or rearrangement mutations;~~ an absence of differences between the sequence of *PKD2* gene in the polynucleotide sample and the reference wild-type *PKD2* sequence (SEQ ID NO:6) is indicative of the ~~thereby detecting the presence or~~ absence of a mutation in the sequence of *PKD2* gene in a human subject.

77. (Previously presented) The method of Claim 76, wherein the subject is an embryo, fetus, newborn, infant, or adult.

78. (Previously presented) The method of Claim 76, wherein the polynucleotide sample is DNA or RNA.

79. (Currently amended) A method of detecting the ~~presence or~~ absence of a mutation in the sequence of polycystic kidney disease type 2 (*PKD2*) gene (SEQ ID NO:6) in a human subject, comprising the steps of:

(a) obtaining a polynucleotide sample containing the sequence of *PKD2* gene from a human subject; and

(b) performing sequence analysis of the polynucleotide sample to detect the ~~presence or~~ absence of a mutation in the sequence of *PKD2* gene (SEQ ID NO:6) of the human subject, wherein the mutation comprises a deletion, insertion, point, or rearrangement mutation.

80. (Previously presented) The method of Claim 79, wherein the subject is an embryo, fetus, newborn, infant, or adult.

81. (Previously presented) The method of Claim 79, wherein the polynucleotide sample is DNA or RNA.

82-91. (Canceled)

92. (New) A method of detecting the presence or absence of a mutation in the nucleotide sequence set forth in SEQ ID NO:6 in a human subject comprising the steps of:

(a) obtaining a polynucleotide sample containing the sequence of polycystic kidney disease type 2 (*PKD2*) gene from a human subject;

(b) comparing the polynucleotide sample to the nucleotide sequence set forth in SEQ ID NO:6, wherein SEQ ID NO:6 sets forth the human wild-type *PKD2* gene sequence; and

(c) determining the differences, if any, between the sequence of *PKD2* gene in the polynucleotide sample and the nucleotide sequence set forth in SEQ ID NO:6, wherein the human wild-type *PKD2* sequence is set forth in SEQ ID NO:6, thereby detecting the presence or absence of a mutation in the nucleotide sequence set forth in SEQ ID NO:6 in a human subject.

93. (New) The method of Claim 92, wherein the subject is an embryo, fetus, newborn, infant, or adult.

94. (New) The method of Claim 92, wherein the polynucleotide sample is DNA or RNA.

95. (New) A method of detecting the presence or absence of a mutation in the sequence of polycystic kidney disease type 2 (*PKD2*) gene in a human subject, comprising the steps of:

(a) obtaining a polynucleotide sample containing the sequence of *PKD2* gene from between genetic markers AFMa059xc9 and AICA1 on chromosome 4 from a human subject, wherein genetic markers AFMa059xc9 and AICA1 flank the *PKD2* gene;

(b) comparing the polynucleotide sample to a reference human wild-type *PKD2* sequence (SEQ ID NO:6); and

(c) determining the differences, if any, between the sequence of *PKD2* gene in the polynucleotide sample and the reference wild-type *PKD2* sequence (SEQ ID NO:6), wherein the differences are mutations of *PKD2* gene which comprise one or more deletion, insertion, point, or rearrangement mutations; thereby detecting the presence or absence of a mutation in the sequence of *PKD2* gene in a human subject.

96. (New) The method of Claim 95, wherein the subject is an embryo, fetus, newborn, infant, or adult.

97. (New) The method of Claim 95, wherein the polynucleotide sample is DNA or RNA.